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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/553,563

10/19/2005

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26281-11A

2044

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7590

09/09/2008

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EXAMINER

MOORE, MARGARET G

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

09/09/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/553,563	Applicant(s) MORI, YASUHIRO	
	Examiner Margaret G. Moore	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 to 12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 to 3, 5 to 12 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/19/05, 7/17/06, 7/31/08</u> . | 6) <input type="checkbox"/> Other: ____. |

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1. Claims 8 to 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For claim 8, it is unclear what is required by this method step. On one hand, the claimed method further comprising a UV-curing step but then the only additional method step actually claimed is that of forming a coating on the surface of the material. It is confusing if the UV curing step is actually required and if so, at what point in the method does it occur.

For claim 9, it is unclear from this claim language if this method requires that any of an epoxy acrylate, urethane acrylate or polyester acrylate UV curing paint actually be formed on the surface or if these adhesion tests only need to be met when one of the recited UV curing paints is used.

For claims 10 to 12, the method by which the wetting index is determined is not defined and as such this makes this limitation indefinite. Note, for instance, that the wetting index in Strobel et al. is measured in terms of J/m^2 . This obviously uses a different standard than the instant claims.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 to 3, 6, 7 and 10 to 12 are rejected under 35 U.S.C. 102(b) as being anticipated by DE 199 05 697.

This rejection will refer to the English language translation provided by applicants in the IDS dated 10/19/05.

DE '697 teaches a process for producing adhesion layers on surfaces. As can be seen from the abstract, layers are prepared by flame treatment with a combustible gas and from .1 to 1.9 wt% of an organosilicon compound. Lines 25 to 30 of page 3 specifically teaches various silanes including vinyl triethoxysilane. This meets the flash point and boiling point of claim 1 as well as claims 2 and 3. The amounts used in the working examples fall within the breadth of claim 6.

For claims 10 and 11, note that the various substrates taught in '697, including the aluminum used in the examples, fall within the type of substrates that applicants admit can be used in the claimed invention (page 26 of the specification). Thus these surfaces will inherently meet the requirement of claim 11 and, since the surface modification claimed is the same as that in '697, the resulting surface modified substrates will necessarily meet the requirements of claim 10. For claim 12, note that the epoxy resin coated on the substrate in '697 is UV curing. This claim does not specifically require a UV curing step.

5. Claims 1 to 3 and 5 to 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Strobel et al., alone or in view of DE '697.

Strobel et al. teach a process of flame treating a substrate to improve adhesion. Column 3, lines 15 and on, teach various silicon containing compounds. The only silicon containing compound specifically taught is hexamethyldisiloxane, having a b.p. of 101°C. Generally, however, this reference teaches a much broader genus of organosilicon compounds. For instance Strobel et al. teach that silazanes can be used. From this one having ordinary skill in the art would have found the selection of the most basic and common silazane, hexamethyldisilazane, to have been obvious. From this one having ordinary skill in the art would have found the selection of hexamethyldisilazane as an organosilicon treating agent in the method of Strobel et al. to have been obvious.

For claim 5, note that Strobel refers to an oxidizer throughout the disclosure (for instance column 3, line 49). Column 2, line 20, generally teaches various compounds

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that are known in the art to function as oxidizers when forming silicon based coatings. This includes alcohol. From this one having ordinary skill in the art would have been motivated to use alcohol as an operable oxidizer in the method of Strobel.

For claim 6, see column 3, line 34.

For claims 8 and 9, see column 5, lines 20 and on, which teaches that the treated substrates can be used in the coating industry to provide improved adhesion between coatings and the substrate surfaces. It is *extremely common* in the coating industry to coat polymeric substrates such as those taught in Strobel et al. with a UV curing coating composition such as epoxy acrylates, urethane acrylates and polyester acrylates. The skilled artisan would have recognized that the polymeric substrates in Strobel et al. could have been subsequently coated with any known and commonly used coating composition, thereby rendering obvious the selection of ones within the breadth of claim 9.

For claims 10 and 11, wetting is very important to the composition of Strobel et al. See for instance column 5, lines 39 and on, and column 3, lines 44 and 45. One having ordinary skill in the art would have been motivated by the teachings of Strobel et al. to optimize and/or adjust the final wetting properties of the treated substrates therein. On the other hand, using the obvious hexamethyldisilazane will inherently result in a wetting index such as claimed since it is the same surface treating agent used by applicants. The Examiner notes that the various polymeric substrates taught on column 4 of Strobel et al. are the same as those taught on page 24 of the instant specification.

On the other hand Strobel et al. generally teach organosilicon compounds including ones having alkoxy and vinyl groups (column 3, lines 15 to 25). DE '697 teach, in a comparable method, vinyl triethoxysilane compounds as useful organosilicon compound for flame treating surfaces.

In view of the general teachings in Strobel et al. one having ordinary skill in the art would have been motivated to select organosilicon compounds that meet the generic teachings therein and are known to be used in flame treatment processes. . As shown by DE '697, vinyl triethoxysilane is such a compound . From this one having ordinary skill in the art would have found the use of a vinyl triethoxysilane compound to have

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been obvious. This applies as well to tetramethoxy and tetraethoxy silanes, both of which meet the organosilicon compound requirements of claim 1.

6. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the prior art teach or suggest such a specific combination of compounds.

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1 3 and 6 to 12 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 to 8 of copending Application No. 11/795,401. Although the conflicting claims are not identical, they are not patentably distinct from each other because the skilled artisan would have found the selection of the common and basic hexamethyldisilazane to have been an

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obvious selection in view of the general "silazane compound" as found in claim 3 of '401.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Margaret G. Moore whose telephone number is 571-272-1090. The examiner can normally be reached on Monday and Wednesday to Friday, 10am to 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Margaret G. Moore/
Primary Examiner, Art Unit 1796

mgm
9/2/08